

In the Claims

Cancel claims 1-8, and add the following new Claims:

CM \ 9. An apparatus for temperature control of an article having opposite substantially planar outer surfaces in an evacuated environment, comprising:

P1 a heat exchanging structure, said structure having at least a stationary heat sink having a substantially planar surface disposed within a vacuum chamber;

P1 transfer means for moving the article into and out of a position with an outer surface thereof adjacent to and substantially parallel with said planar surface of said heat sink;

10 P1 said heat sink being spaced a predetermined distance apart from an article ~~in position~~ ^{which defines} sufficient to permit the positioning and removal of said article from a parallel relationship with the surface of the heat sink without contacting said heat sink;

P1 said predetermined distance being further selected to permit a substantial convective/conductive heat transfer between said article and said heat sink; and

P1 means for providing a high conductivity gas between said heat sink and said article at a pressure significantly above that of said vacuum chamber, yet substantially below that of the atmosphere.

10. The apparatus of Claim 9 wherein said predetermined distance from said facing surface of said heat sink to said facing surface

of said article is generally between 0.05 to 0.25 in.

B →
3 N. The apparatus of ~~Claim 9~~ wherein said heat sink includes means for cooling said heat sink.

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12. A method for temperature control of an article having opposite substantially planar outer surfaces in an evacuated environment, comprising:

11 P1 spacing a heat sink having a substantially planar outer surface 5 in a parallel and facing relationship with an outer surface of said article, said heat sink being operatively mounted within a processing chamber adapted to operate at a pressure substantially less than atmospheric pressure;

10 P1 placing the article without contacting the heat sink a predetermined distance apart and in a parallel relationship with said heat sink, said article being positioned close enough to permit a substantial convective/conductive heat transfer from between said article and said heat sink;

B → 15 P1 controlling the temperature of said heat sink to a predetermined level; *Cold compared to the wafer*

P1 introducing a high thermal conductivity gas between said heat sink and said article at a pressure significantly above that of said processing chamber, yet substantially below that of atmosphere to facilitate the heat transfer between said substrate and said heat sink; and

20 P1 removing said article from said processing chamber after said article attains a predetermined temperature.